

The Dynamical Structure of the Nucleus and Inner Coma of Comet 1996B2(Hyakutake)

W. M. Harris, F. Scherb (University of Wisconsin), M. R. Combi (University of Michigan), B. E. A. Mueller (NOAO)

We present new results from images taken of Comet 1996B2 (Hyakutake) using the 3.5m WIYN telescope at the Kitt Peak Observatory from 25-31 March, 1996. We provide additional dynamical information about the rotational characteristics of the nucleus, including the major plane of rotation, an upper limit to the period, and a comparison of these characteristics over several hours on successive nights. In addition, a direct measurement of the jet outflow velocity near the nucleus is shown based on the movement of a detached sunward facing plume. We also present additional analysis of the structure and temporal evolution of the unique arc shaped emission feature observed to trail the nucleus in images isolating gas emissions of OH and CN. Continuum subtracted images are shown along with measurements of the tailward velocity and rate of spreading in the debris condensation that preliminary model calculations suggest may be the source of the arc.

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Paper presented by Walter M. Harris

Space Astronomy Laboratory

University of Wisconsin

1150 University Ave.

Madison WI 53713 United States of America

Phone: 608-265-3436

Fax: 608-263-0361

Email: wharris@harlan.sal.wisc.edu

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